

REMARKS

The claims now pending in the application are Claims 1 to 12, the independent claims being Claims 1, 11 and 12. Claims 1, 11 and 12 have been amended herein in terms which distinguish over the art of record.

In the Official Action dated October 27, 2003, Claims 1 to 3 and 10 to 12, were rejected under 35 U.S.C. § 102(b), as anticipated by U.S. Patent No. 5,719,951 (Shackleton et al.) and Claims 4 to 6 were rejected under 35 U.S.C. § 103(a), as unpatentable over the Shackleton '951 patent in view of the Drummond publication (Real-Time tracking of Complex Structures with On-Line Camera Calibration). Claims 7 and 8 were rejected under 35 U.S.C. § 103(a), as unpatentable over the Shackleton '951 patent in view of U.S. Patent No. 6,188,776 (Covell). Claim 9 was rejected under 35 U.S.C. § 103(a), as unpatentable over the Shackleton '951 patent, in view of U.S. Patent No. 6,266,443 (Vetro). Reconsideration and withdrawal of the rejections respectfully are requested in view of the above amendments and the following remarks.

The rejections of the claims over the cited art respectfully are traversed. Nevertheless, without conceding the propriety of the rejections, Claims 1, 11 and 12 have been amended herein more clearly to recite various novel features of the present invention, with particular attention to the Examiner's comments. Support for the proposed amendments may be found in the original application. No new matter has been added.

Applicants submit that the prior art fails to anticipate the present invention. Moreover, Applicants submit that there are differences between the subject matter sought to be patented and the prior art, such that the subject matter taken as a whole would not have been obvious to one of ordinary skill in the art at the time the invention was made.

Independent Claim 1 as currently amended is directed to image processing apparatus in which an input unit inputs successive image data and a detection unit detects a change between the successive image data. A generation unit generates initial contour

information to extract an object present in the image data according to the detection unit output. A extraction unit extracts object image data corresponding to the object on the basis of the initial generated contour information.

Independent Claim 11 as currently amended is directed to an image processing method in which successive image data is input and a change between the successive image data is detected. Initial contour information is generated to extract an object present in the image data according to the detected result. Object image data corresponding to the object is extracted on the basis of the generated initial contour information.

Independent Claim 12 as currently amended is directed to a storage medium that stores program codes of image processing steps that includes the code of inputting successive image data, a code of detecting a change between the successive image data, a code of generating initial contour information to extract an object present in the image data in accordance with the detection result and a code of extracting object image data corresponding to the object on the basis of the generated initial contour information.

In Applicants' view, Shackleton et al. discloses an image processing method in which the position of at least one predetermined feature is located within an image. Image data representing each feature is extracted from the image data. A feature vector representing the position of the image data of the feature in an N-dimensional space defined by plural reference vectors is calculated. The space is defined by plural reference vectors. Each reference vector is an eigenvector of a training set of like features in which the image data of each feature is modified to normalize the shape of each feature thereby to reduce its deviation from a predetermined standard shape of the feature, which is carried out before calculating the corresponding feature vector.

According to the invention defined in Claims 1, 11 and 12, a change between successive inputted image data is detected to generate initial contour information

and object image data is extracted on the basis of the initial contour information.

Accordingly, a motion vector is detected to generate the initial contour information. The feature of detecting a change on inputted image data is disclosed at least from line 21 of page 13 to line 23 of page 14 in the specification with respect to Fig. 3. No new matter is believed to have been added.

Shackleton et al. may disclose extracting an image of a face from a picked-up image using contour information based on "snake" techniques, performing edge enhancement on the image when the contour is formed and then extracting a feature image from the extracted face image. Shackleton et al., however, only teaches edge enhancement processing to form an edge enhanced image from a difference picture or by using a Laplacian type operator the output of which is modified by a sigmoidal function but fails to teach or suggest the feature of Claims 1, 11 and 12 of generating initial contour information by detecting a change between successive image data. It is therefore believed that Claims 1, 11 and 12 as currently amended are completely distinguished from Shackleton et al. and are allowable.

For the above reasons, Applicants submit that independent Claims 1, 11 and 12 are allowable over the cited art.

Claims 2 to 9 depend from Claim 1 and are believed allowable for the same reasons. Moreover, each of these dependent claims recites additional features in combination with the features of independent Claim 1, or its respective base claim, and is believed allowable in its own right. Individual consideration of the dependent claims respectfully is requested.

In formal matters, the specification and abstract have been amended as to matters of form, including English spelling, grammar, idiom, syntax and the like. No new matter has been added.

Applicants believe that the present Amendment is responsive to each of the points raised by the Examiner in the Official Action, and submit that the application is in allowable form. Favorable consideration of the claims and passage to issue of the present application at the Examiner's earliest convenience earnestly are solicited.

Applicant'(s) attorney, C. Phillip Wrist, may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Jack S. Cubert", is written over a horizontal line.

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